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**REDESCRIPTION OF A POORLY KNOWN SPECIES *NESTICELLA*
KERZHNERI (MARUSIK, 1987) (ARANEI: NESTICIDAE)**

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Summary. A poorly known species of the genus *Nesticella* Lehtinen et Saaristo, 1980 from the Russian Far East is redescribed based on newly collected material.

Key words: Araneae, Nesticidae, Russian Far East, Sikhote-Alin Mt. Range.

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Резюме. На основании нового материала с Дальнего Востока России переописан малоизвестный вид рода *Nesticella* Lehtinen et Saaristo, 1980.

INTRODUCTION

Nesticidae Simon, 1894 is a small family comprised of 278 extant species placed in 16 genera (World Spider Catalog, 2020). The family has an almost worldwide distribution but is absent from Siberia, Central Asia, North Africa and Polar Regions (Lin *et al.*, 2016). These spiders were reported from various regions of the European part of Russia (Caucasus, Russian Plain and Fennoscandia) and from the Ural (Mikhailov, 2013) as well as the Crimea. To date, only two species of Nesticidae are known from the Russian Far East (Mikhailov, 2013). Both belong to the genus *Nesticella* Lehtinen et Saaristo, 1980, which contains 72 species and has mostly Palearctic distribution (Lin *et al.*, 2016; World Spider Catalog, 2020). One species, *N. brevipes* (Yaginuma, 1970) occurs in the Sakhalin and Kuril Islands in Russia, where it is found in litter under the bushes (Marusik & Crawford, 2006) and also in Japan, the Korean Peninsula and China (World Spider Catalog, 2020). Another species, *N. kerzhneri* (Marusik, 1987), was originally described from the screes and small caves of the continental part of the Russian Far East in the genus *Hovaia* Lehtinen et Saaristo, 1980 (Marusik, 1987). This genus was synonymized with *Nesticella* Lehtinen et Saaristo, 1980 by Wunderlich (1986), while Marusik & Guseinov (2003) disputed this synonymy. The original description of *N. kerzhneri* was supplied with only two figures of the male palp and one drawing of the epigyne. Illustrations of male and female habitus, vulva and data on leg measurements and spination were not given. While studying the material collected in the

Sikhote-Alin Mountains in the south of the Primorsky Krai, we found several specimens of both sexes belonging to this species. We provide here a redescription of *N. kerzhneri*.

Specimens were photographed using a Nikon DS-Ri2 camera attached to a Nikon SMZ25 stereomicroscope at the Far Eastern Federal University. Photographs were taken in dishes with soft white paper on the bottom and filled with alcohol. Digital images were montaged using Zerene Stacker software (<http://zerenesystems.com/cms/stacker>). Epigynes were cleared in a KOH/water solution until soft tissues were dissolved. All measurements are in millimeters. The format of description and terminology follows Lin *et al.* (2016). Abbreviations used in the text and figures: *C* – conductor, *Co* – copulatory openings, *Cd* – copulatory ducts, *Cp* – process of the conductor, *Da* – dorsal apophysis, *Dp* – distal process, *E* – embolus, *Fd* – fertilization ducts, *P* – paracymbium, *S* – spermathecae, *Sp* – scape, *T* – tegulum, *Ta* – terminal apophysis, *Tg* – tegular apophysis, *Va-I (II)* – ventral apophysis. All material examined is deposited in the Zoological Museum of Moscow State University, Moscow, Russia (ZMMU) Institute of Systematics and Ecology of Animals SB RAS, Novosibirsk, Russia (ISEA) and in the Zoological Museum of the University of Turku, Finland (ZMUT).

DESCRIPTION

Nesticella kerzhneri (Marusik, 1987)

Figs 1–13

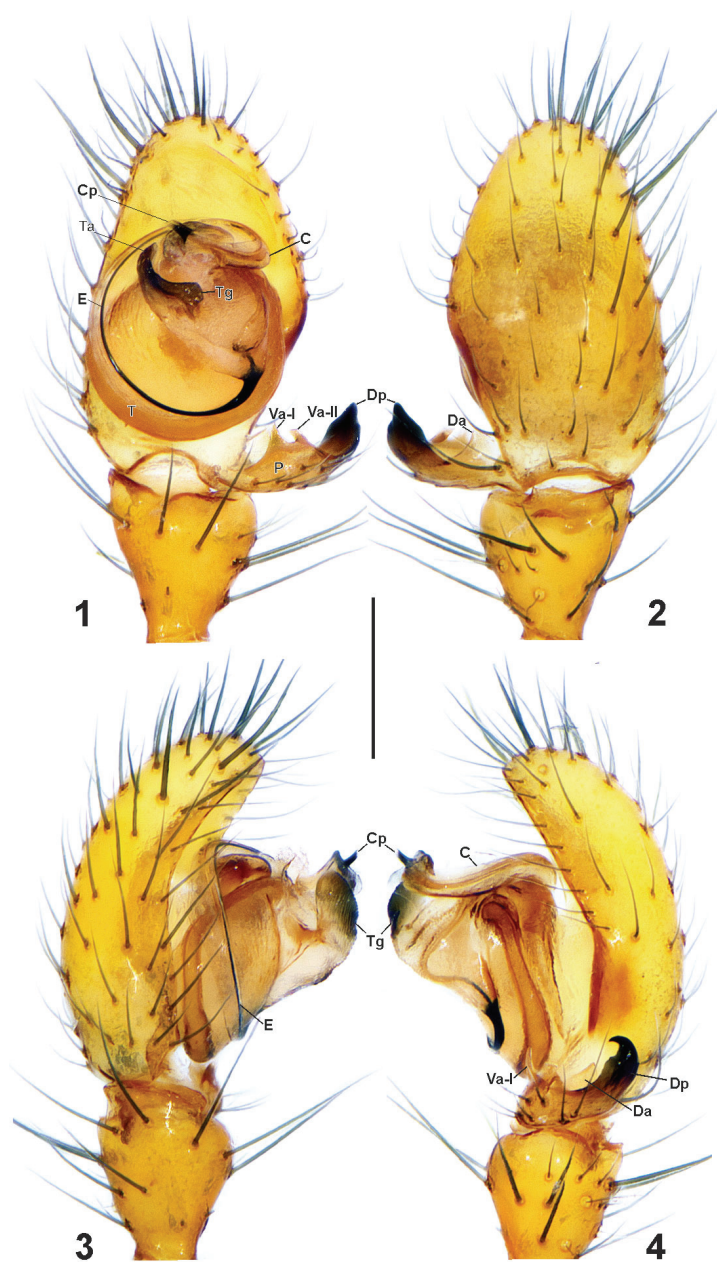
Howaia kerzhneri Marusik, 1987: 462, figs. 4–6 (♂, ♀); Marusik & Kovblyuk, 2011: 199, fig. 25.3 (♂).

Nesticella kerzhneri: Platnick, 1989: 184.

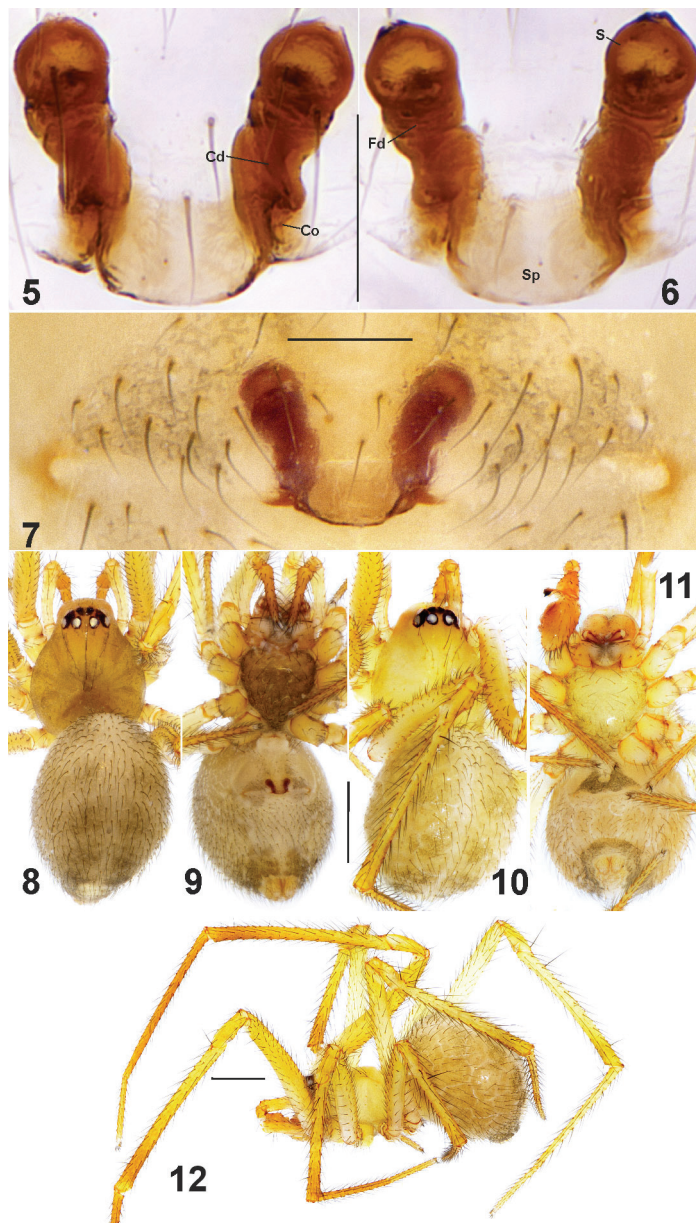
MATERIAL. Russia: Khabarovsk Krai: Bolshekhokhtsyrsky Reserve, environs of Bychikha Village, 48°14.56'N, 134°47'E, “Klyuch Sosnenskiy” Kordon, 300–430 m, 13–14.IX 2005, 1♀ (ZMUT), leg. Y.M. Marusik; Bolshekhokhtsyrsky Reserve, tall grass with moist ground litter, 11.IX 2005, 1♀ (ZMUT), leg. Y.M. Marusik; Bolshekhokhtsyrsky Reserve, Chirki Kordon, V–VI 2004, 5♂, 9♀ (ZMUT), leg. A.V. Tanasevitch; Bolshekhokhtsyrsky Reserve, fir with moss litter, 27.V 2004, 12♂ 10♀ (ZMUT), leg. A.V. Tanasevitch. Primorsky Krai: Sikhote-Alin Mountains, Ovrazhnaya Mountain, 43°42.329'N, 132°07.270'E, large-block scree in the oak forest, 200 m, 14.VII 2019, 1♂, 2♀ (ZMMU), 2♂, 2♀ (ISEA 001.8522), leg. A.A. Fomichev; environs of Vladivostok, Okeanskaya, 43°13.502'N, 132°1.394'E, creek valley, 24.VII 1994, 9♂, 14♀ (ZMUT), leg. K.Y. Eskov.

DIAGNOSIS. Judging from the structure of copulatory organs, *N. kerzhneri* belongs to the *Nesticella brevipes*-group. The males of *N. kerzhneri* can be distinguished from those of most other species of this group by the combined presence of the following features: (1) paracymbium having only one branch (*Dp-II* absent); (2) *Dp* with a hook-like, sharply pointed tip (Fig. 4); (3) *Tg* relatively short, rounded. Females of *N. kerzhneri* resemble those of *N. liuzhaiensis* Lin, Ballarin et Li, 2016, *N. robusta* Lin, Ballarin et Li, 2016 and *N. yao* Lin, Ballarin et Li, 2016 by having a wide scape (*Sp*) with almost straight posterior margin. From the first species, *N. kerzhneri* can be easily separated by their larger spermathecae (diameter of which is greater than copulatory duct width vs. less than copulatory duct width) and from the two latter species, by having more widely spaced copulatory ducts (1.45 of copulatory duct diameter vs. 0.65 and 0.63, respectively).

DESCRIPTION. Male. Total length 2.22. Carapace 1.09 long, 0.92 wide. Abdomen 1.28 long, 1.12 wide. Clypeus 0.2 high. Sternum 0.65 long, 0.62 wide. Habitus as in Figs 10–12. Carapace yellow, slightly darker at cephalic part. Clypeus yellowish. Chelicerae orange. Maxillae and labium yellowish. Sternum yellow with sparse long setae. All leg segments yellow, except for Mt–Ta I and Mt–Ta II which light brown. Abdomen color varies from grayish yellow to dark gray dorsally with poorly visible spots, ventrally light brown. Area around spinnerets grayish.



Figs 1–4. Male palp of *Nesticella kerzhneri*. 1 – ventral; 2 – dorsal; 3 – prolateral; 4 – retrolateral. Scale = 0.2 mm. Abbreviations see text.



Figs 5–12. Female copulatory organs and habitus of *Nesticella kerzhneri*. 5 – macerated epigyne, ventral view; 6 – macerated epigyne, dorsal view; 7 – intact epigyne, ventral view; 8 – female habitus, dorsal view; 9 – same, ventral view; 10 – male habitus, dorsal view; 11 – same, ventral view; 12 – male, lateral view. Scale = 0.1 mm (5–7) and 0.5 mm (8–12). Abbreviations see text.

Leg measurements: I 6.34 (1.80+0.44+1.73+1.63+0.74); II 4.66 (1.37+0.37+1.19+1.14+0.59); III 3.61 (1.11+0.32+0.79+0.88+0.51); IV 5.17 (1.59+0.35+1.38+1.25+0.60). Male palp as in Figs 1–4. Cymbium approximately 1.5 times longer than wide. Paracymbium with two ventral apophyses (*Va-I*, *Va-II*) (Figs 1, 4). *Va-I* long and laminar, while *Va-II* shorter. Distal process (*Dp*) without any branches with hook-like tip (Figs 1–2, 4). Dorsal apophysis (*Da*) flat and triangular (Fig. 2). Terminal apophysis (*Ta*) long and narrow (Fig. 1). Tegular apophysis (*Tg*) poorly developed, short and rounded (Fig. 1). Conductor (*C*) with a long, finger-like process (*Cp*) (Figs 3–4).

Female. Total length 2.50. Carapace 1.14 long, 0.94 wide. Abdomen 1.66 long, 1.12 wide. Clypeus height 0.18. Sternum 0.67 long, 0.60 wide. Habitus as in Figs 8–9. Carapace, clypeus and chelicerae brown. Maxillae and labium light brown. Sternum dark brown with sparse long setae. Legs coloration as in male. Abdomen coloration as in male but usually more contrast.

Leg measurements: I 6.19 (1.82+0.45+1.71+1.47+0.74); II 4.56 (1.38+0.40+1.11+1.05+0.62); III 3.55 (1.09+0.35+0.83+0.75+0.53); IV 5.11 (1.63+0.38+1.37+1.12+0.61).

Epigyne strongly sclerotized (Figs 5–7). Scape (*Sp*) short and wide. Spermathecae (*S*) rounded, separated by about two diameters. Fertilization ducts (*Fd*) with poorly visible coils. Copulatory openings (*Co*) widely separated, located near the lateral margins of the epigyne.

BIOLOGY. Specimens from the Ovrazhnaya Mountain were collected in a large-block scree in the oak forest at the altitude of 200 meters a.s.l. Spiders were found on the underside of large stones. Microclimatic conditions in this scree appear to be similar to those in a cave: scarce light, high humidity and low temperature. Precise data about habitat for specimens collected in Vladivostok are not available.

DISTRIBUTION. Russia: Amurskaya Oblast, Jewish Autonomous Oblast, Primorsky Krai (Fig. 13). Most likely, this species also occurs in the adjacent Heilongjiang Province of China.

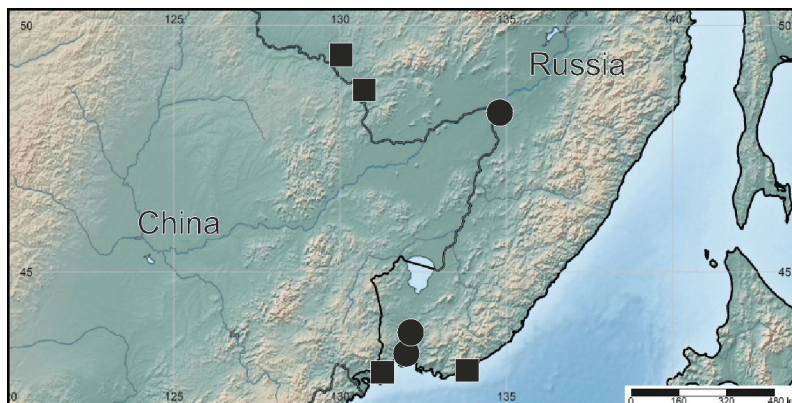


Fig. 13. Distribution of *Nesticella kerzhneri*. Squares – literature data; circles – examined specimens.

DISCUSSION

There are two types of screes found in the Russian Far East. The first type includes extensive screes located on the tops of the highest mountains (1000–2000 m). A high level of endemism is known among spider species that inhabit such screes (Fomichev & Omelko, 2020; Marusik & Omelko, 2011; Omelko & Marusik, 2013). Such screes are easy to detect on topographic maps and on satellite imagery. Another type includes small and very local screes

scree locations at low altitudes (less than 500 m) within the forest belt. This type of scree cannot be detected on maps and satellite images. It seems that the Nesticidae in the Russian Far East prefer exactly the latter type of scree (Marusik, 1987, our data). Due to the lack of precise mapping that would reveal distribution of such habitats, it is probable that the diversity of Nesticidae in the Russian Far East currently remains uninvestigated. This assumption is reinforced by the fact that members of the Nesticidae are usually local endemics (Lin *et al.*, 2016). It is worth mentioning that many karst caves are known from the Russian Far East. When exploring these caves, additional species of the Nesticidae could be discovered in future.

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